Hanford Mission Integration Solutions

Statement of Work

Title: Habitat Enclosure for Ground Squirrels

Requisition Number: 355525

SOW Revision Number: 0

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1.0 INTRODUCTION / BACKGROUND

The Department of Energy, Richland Operations Office, (DOE-RL) manages the Hanford Site working toward protecting the workers, public, and environment by further reducing risk, as well as providing the necessary infrastructure for continued safe and effective cleanup operations, access and use. This is accomplished by work performed by contractors and subcontractors, to ensure the safety of Hanford cleanup.

As a Prime Contractor to the U.S. Department of Energy, Hanford Mission Integration Solutions (HMIS) is responsible for providing direct support to the DOE-RL and its contractors with cost effective infrastructure and site services integral and necessary to accomplish the Hanford Site environmental cleanup mission.

HMIS Environmental is responsible for protection of natural resources on the Hanford Site. HMIS has identified Townsend's ground squirrels as a valuable biological resource that has been declining over the past 10 years. As a result, HMIS requires construction support for a habitat enclosure that will be used as part of the recovery effort for Townsend's ground squirrels on the Hanford Site.

2.0 OBJECTIVE

HMIS Environmental Field Support requires the services of an experienced subcontractor to provide all required materials and services to contribute to the creation of a habitat enclosure for Townsend's ground squirrels. This work is generally located in the 600 Area of the Hanford Site, approximately 25 miles north of Richland, Washington.

3.0 RESPONSIBILITIES

Subcontractor will provide all materials, labor, and supervision to create a habitat enclosure for ground squirrels. This includes creation and installation of 10 Artificial Burrow Systems (ABS), creation of underground tunnels using an unbated and cleaned Verminator machine, and creation and installation of a fenced and gated enclosure. The area which will be fenced-in and contain the burrows and tunnels and will consist of 2.5 acres in size. ABS installation, tunnel creation, and fence installation shall be completed before March 31, 2022.

Work will occur in an area that was recently revegetated. The subcontractor shall take care to limit off road travel within the work area to the extent possible. Areas that have been planted with shrub seedlings will be marked and will be off-limits to both pedestrian and vehicle travel.

The materials required for construction of a single ABS is outlined in Appendix D, *Equipment Component for Completion of a Single ABS*.

Any waste generated through Hanford Site activities will be radiologically cleared prior to moving off the Hanford Site for disposal. All non-dangerous waste created through this process will be disposed of by the contractor through Basin Disposal Incorporated. Any waste other than non-dangerous (not expected from this work) will require the subcontractor to notify the BTR for coordination with the Environmental Compliance Officer for the project prior to disposal. An HMIS biologist Subject Matter Expert (SME) will be present during installations on the Hanford Site.

The work required to be performed per this SOW is described below in parts. The work will be performed in the order it is described below unless otherwise instructed by the BTR.

3.1 Task(s)

ABS Construction and Installation

The work required to be performed shall include the construction of 10 Artificial Burrow Systems (ABS) and installation of the 10 constructed systems at designated locations within a 2.5-acre subsection of a 5-acre project area. ABS will be constructed as a habitat for ground squirrels and the methods for construction and installation are based off modified guidelines found in the Global Owl Project developed *Users Guide to Installation of Artificial Burrows for Burrowing Owls* (Version 2.0) issued on January 8, 2013. The steps pertaining to the requested scope are listed in the Appendix C of this SOW - *Guide for Construction and Installation of Artificial Burrow Systems on Hanford*. All equipment required for construction of the ABS chamber is located in Appendix D, *Equipment Component for Completion of a Single ABS* of this SOW.

Construction

The main burrow chamber shall be constructed from a 55-gallon plastic barrel, a single barrel will yield two burrow chambers by cutting the barrel in half. The ½ barrel chamber shall have a bucket access hole cut in the top of the chamber and a tunnel attachment shape will be cut into the bottom ring of the chamber. An access port 3.5-gallon (3.79 L) bucket shall be affixed to the top of the chamber and sealed in place with permanent adhesive. Access buckets shall be affixed with a brass numbering tag so the ABS can be identified properly. A second 3.5 g (3.79 L) bucket shall be ½ filled with soil and sealed with lid. This bucket shall require the handle to remain in place and will slide inside the access port affixed to chamber barrel to produce a removable seal. The tunnel shall be a 3 meter (m) (10 ft) long by 10 centimeter (cm) (4 inches [in]) diameter pipe that will be inserted into the tunnel attachment on the chamber during the installation process.

Installation

The installation areas for the ABS will be clearly marked prior to installation. Hand excavation or a small backhoe shall be used to dig the holes needed for ABS installation. The main burrow

chamber shall be installed by digging a hole approximately 1.2 m (4 ft) by 1.2 m (4 ft) to a depth of no more than 1 m (3.3 ft) below grade. An additional trench shall be excavated to place an approximately 3 m (10 ft) long by 10 cm (4 in) diameter pipe creating, a tunnel from the chamber rising gradually to the ground surface. All below-ground structures shall be covered with soils removed during the excavation. A 1 m (3 ft) piece of rebar shall be bent in half to create a U-shape that will be installed over the entrance to the tunnel to ensure the tunnel stays in place. The last 0.9 m (3 ft) of grade to the tunnel shall be backfilled with large cobbles (baseball to softball size) brought onsite by the subcontractor to prevent mammals from digging out the entrance to the pipe. A 5-gallon bucket full of this cobble shall usually suffice for two burrow entrances. To identify the ABS, a small stake shall be located behind each chamber access point with a painted or drawn on number matching the brass tag on the ABS.

Tunnel Building

Tunnels shall be constructed throughout a 2.5-acre section of the 5-acre area to provide refuge for ground squirrels. These underground tunnels shall connect the installed ABS and shall not be lined with any material. The underground tunnels shall be constructed mechanically with a machine called the Verminator. This farm implement is typically used for eradication of rodents by creating a tunnel then dropping poison into the tunnel. No poison shall be used for this application, rather the machine shall be used for its tunnel building abilities. The subcontractor shall ensure the machine is thoroughly cleaned of any residual poison or rodent control substances before use. The created tunnels shall be 6-18 in below surface level. HMIS will not provide the Verminator but can provide the subcontractor with contact information to rent the machinery.

In addition to the underground tunnels, the same 4-in diameter corrugated pipe used for the ABS entrances shall be secured above ground to provide an escape shelter for ground squirrels. This shall be done by affixing ten 10-foot sections of pipe (totaling 100 ft of pipe, the standard size of one roll) throughout the 2.5-acre area using three 3-ft rebar bent in a U-shape per pipe to secure the pipe in the ground.

Fence Installation

Upon the conclusion of all other habitat activities, a fence shall be constructed and installed by the subcontractor around the perimeter of a 2.5-acre section of the 5-acre total area. The fence shall be constructed using 4 ft high galvanized wire with ½-inch mesh attached to T-posts or similar, durable posts every 4-6 ft. The bottom 1-ft of this fence shall be buried underground to prevent digging into or out of the enclosure, requiring trenching around the perimeter where the fence is to be installed.

A 1-ft wide strip of galvanized wire mesh shall be placed on the ground surface perpendicular to and along the interior perimeter of the fence. This mesh shall deter ground squirrels from digging out of the enclosure. It shall be adhered to the fence with zip-ties or another durable

method and secured into the ground using small tent stakes every 10-15 ft as needed. Additionally, 4-in diameter corrugated pipes shall be installed along the top of the fence by cutting lengthwise through the pipes and affixing the pipes to the top of the fence with zip-ties or another durable method. These will act as barriers to prevent the squirrels from climbing out of the enclosure.

The fence shall include 1 gate wide at least 6-ft wide. The gate shall be 3-ft tall to match the surrounding fence. It can be made up of one or two pieces to open either French-door style or single swing. There shall be 1ft of wire mesh buried underground below the gate to ensure no digging in or out of the enclosure at the gate entry point. It is essential that the gap between the bottom of the gate and the ground surface is as small as possible and no larger than ½-inch to prevent animals from escaping. Use of durable and tough brush guard to manage this gap will be acceptable as long as material is not malleable enough for a small mammal to push through. A solid foundation (concrete, wood or metal) below the gate and above the trenched mesh is acceptable to ensure there is no soil erosion and exposure of underground materials or potential depression below the gate. The gate shall be installed on the side of the fence facing the paved road. This fence will be temporary in nature and will be removed by HMIS after approximately 5 years.

3.2 Sequencing

Sequence of tasks may change if instructed by the BTR.

The following is intended to be broad in scope, identifying major work elements only, and should not be considered all-inclusive:

- Procure all materials for ABS construction and installation, tunnel creation, and fence installation.
- Construct and cure all ABS components prior to field installations
- Transport and delivery all needed materials to the field site on an as-needed basis
- Place and maintain any and all barriers that may be required to perform the scope at the installation location
- Install ABS as directed by HMIS biologists
- Install tunnels as directed by HMIS biologists
- Install fencing around the perimeter of the designated 2.5-acre area.

3.3 Acceptance Criteria

A. The subcontractor shall perform the work in accordance with this Statement of Work (SOW) and the drawings and specifications identified in associated Design Change Notices (DCN).

B. The subcontractor shall document the required quality control and quality assurance verification steps including all in-process, witness, hold and final inspection activities in accordance with the approved Construction Inspection Test Matrix (CITM) and Construction Inspection Test Record (CITR) documents (Section 6.8). These records shall be maintained with the field work package available at the field work location.

C. The Buyer will document final acceptance of the completed work in accordance with HMIS-PRO-ENG-286, *Testing of Equipment and Systems*.

3.4 Special Requirements

A. **Independent Ground Scan**: Prior to initiating excavation activities, the construction subcontractor shall have performed a ground scan of areas where excavation will occur, using Ground Penetrating Radar (GPR) and a 50/60 Hz. active utility detection wand, by a qualified person.

B. **"Two Minute Drill" Card**: At the Construction Kickoff Meeting, the Buyer will provide subcontract employees (including lower-tier employees) a laminated "Two Minute Drill" card. The "Two Minute Drill" is a tool designed to improve situational awareness and enable personnel to identify changing conditions/hazards during the performance of the contract. **Subcontract employees are required to possess and use the "Two Minute Drill" card throughout the duration of the contract.**

C. The subcontractor is required to maintain copies of documents pertinent to the work (including Job Hazard Analyses, work releases, pre-job briefings, training records, permits, released drawings, specifications, etc.) on the jobsite throughout the performance of the contract.

D. The subcontractor shall flow down requirements of the SOW to the lowest tier subcontractor(s) performing work on the Hanford Site commensurate with the risk and complexity of the work.

E. The subcontractor is required to notify the Buyer's Technical Representative (BTR)/Construction Manager (CM) prior to beginning fieldwork.

F. **Organizational Interfaces**: The Subcontractor shall interface with the Buyer and other various organizations through the Contract Specialist (CS) (or designee), as required, at points and frequency incorporated elsewhere in this SOW and Subcontract Documents. All field communication shall be transmitted through the HMIS BTR. Any direction that could affect costs, schedule, or work outside the scope shall not be recognized if direction in writing has not been issued through the Contract Specialist.

G. ABS Construction and Installation

- Subcontractor shall follow the directions for construction and installation found in Appendix C of this SOW. Any variation to the design must be pre-approved in writing by the BTR.
- 3.5 gallon buckets shall be UV resistant and strong enough to withstand weather conditions. The equipment list provided suggests buckets that have been used successfully on Hanford with other ABS installations.
- Tunnels and chambers should be unimpeded and free of any screws, hardware or sharp edges that could cause potential injury to animals using the ABS.

H. Tunnel Construction

- Use of a Verminator or BTR approved equipment with similar function as a verminator will be used to create the tunnels
- Equipment shall be clean and free of any poison or rodenticide.
- HMIS will provide direction on location or pattern of tunnels.

I. Fence Building

- Fence is being constructed to keep ground squirrels in and predators out. Construction shall be sturdy and free of gaps that would allow travel of small to large mammals in or out.
- Fence shall be constructed to avoid sharp edges or designs that will cause injury to wildlife by coming in contact with the fence.
- Fence installation shall avoid driving over revegetation areas to the greatest extent possible.
- Vehicles and workers will avoid driving over and trampling planted shrubs.

3.5 Site Conditions and Known Hazards (Facility Specific)

Site facility specific conditions/requirements and known hazards are as incorporated in this SOW.

Asbestos	
☐	It **IS** expected that asbestos-bearing materials will be encountered during the performance of this work. All asbestos containing material (ACM) and presumed asbestos containing material (PACM) will be handled in accordance with HMIS-RD-WP-15097, *Asbestos Control - Construction Industry*.
☒	It is **NOT** expected.

Silica	
☐	It **IS** expected that silica-bearing materials will be encountered during the performance of this work and all activities that may potentially generate respirable silica, such as concrete cutting, are to be conducted in accordance with 29 CFR 1926.1153 and HMIS-PRO-WP-61800, Respirable Crystalline Silica requirements.
☒	It is **NOT** expected.

Hexavalent Chromium	
☐	It **IS** expected.
☒	It is **NOT** expected. However, since painted surfaces typically contain lead chromates, and many metals contain hexavalent chromium, the subcontractor is required to notify the Buyer's Technical Representative (BTR) and Construction Manager (CM) prior to cutting, burning, welding or polishing of metal or painted surfaces.

Radiological Contamination	
☐	It **IS** anticipated that radiological contamination will be encountered during performance of this work. Section 6.10, "Radiological Requirements," outlines the radiological survey and monitoring required during the performance of this contract.
☒	It is **NOT** expected.

3.6 Government Property

Pursuant to the Special Provision 12 (SP-12) – Government Property, the following Government-owned property will be furnished to the Subcontractor. The subcontractor shall not be responsible for managing the Government-Furnished Property (GFP) below and/or Contractor-Acquired Property (CAP) as required in the Subcontract Special Provision, (SP-12) and in accordance with its Property Management program.

3.7 Site Coordination Requirements

- Construction Facilities
- Laydown Areas:
  - Parking for subcontractor's company vehicles is available at the jobsite
  - Parking for subcontractor employees' personal vehicles
- First aid and Emergency Care:
- Hanford Site Occupational Medical Contractor (HSOMC) locations:
  - 1979 Snyder, Richland, Washington
  - 2719WB in the 200 West Area.
- For after hours or immediate response emergencies, **call 911 on a plant phone or (509) 373-0911 on a cell phone**.
- The subcontractor may self-treat employees for minor first aid injuries. However, where an employee has a medical condition that requires treatment from a medical specialist, the Subcontractor must take the employee to HSOMC for evaluation and/or treatment prior to transporting them to an off-site medical provider.

A. The subcontractor shall provide:

- When a subcontractor performs physical work which has risk potential (employees, equipment, environment, or plant) outside of daylight hours, they are responsible for providing adequate lighting to perform the project work scope.
- Generators for construction power. The subcontractor is required to ground generators in accordance with NEC/NESC requirements, and notify the BTR and CM for compliance inspection prior to use.

  NOTE: No modifications shall be made to portable generators on Hanford managed property without written permission from Field Execution Manager/Director.
- Cell phones for supervisory personnel
- Portable restrooms
- Ice and drinking water

  NOTE: The subcontractor shall restore areas, (including laydown areas) disturbed during construction to pre-existing conditions.

B. Permits

Buyer will provide the following permits, as required, to the subcontractor within eight (8) working days of written request:

- Hanford Site Excavation Permit
- *Electrical Installation Permit* (Site Form A-6005-707)
- *Initial Construction/Demolition Fire Safety Inspection Checklist* (Site Form A-6002-692)

Other permits such as Hot Work Permits are the responsibility of the subcontractor to complete and provide to the BTR for review/signature.

- Exercises and Drills

The Hanford Site performs various emergency action or response drills on an average of once every three (3) months lasting approximately two (2) hours. Subcontractor personnel working within the drill area are required to participate in these drills unless exempted in writing by the BTR.

- Outage Requests

The subcontractor shall provide five (5) working days advance notice for systems requiring an outage or lockout/tagout for the control of hazardous energy. HMIS shall fulfill the role of Controlling Organization for subcontractor lockout/tagout operations.

3.8 Delivery, Storage and Handling

The subcontractor shall:

A. Provide equipment and labor required for unloading, transporting and handling delivered products/materials

B. Ensure that loads entering/exiting the Hanford Site are properly secured

C. Follow manufacturer's recommendations/instructions regarding the handling and storage of all materials

D. Store packaged products in original unbroken packages and containers

E. Leave manufacturer's seals and labels intact during storage

F. Arrange for immediate disposal and replacement of products found to be defective, damaged beyond repair, or in otherwise unacceptable condition.

4.0 TECHNICAL REQUIREMENTS

The subcontractor shall perform work in accordance with the national codes, specifications, drawings, exhibits, and other documents, which by reference are made a part of the SOW.

Inspection of the Work required by governmental agencies shall be arranged by the BTR. The subcontractor shall request inspections through the BTR, after the Work is ready for inspection.

In-process oversite of the subcontractor's in-process Work shall be performed by the BTR's construction project support personnel as appropriate.

4.1 Codes and Standards

The subcontractor is required to comply with codes and/or standards that apply to each component and system. Unless specified otherwise, the current edition or revision of the code or standard in effect on the date of award shall be used. Technical codes, standards, and references are identified in the approved design documents.

G. Codes:

H. Standards:

4.2 Electrical Safety Requirements

A. Electrical control panels and electrical equipment (including material, fittings, devices, appliances, luminaries [fixtures], apparatus), delivered or brought onto the site in performance of this Subcontract must be labeled by an organization currently recognized by OSHA as a nationally recognized testing laboratory (NRTL) and must comply with the National Electric Code (NEC), NFPA 70 and, where applicable, ANSI/IEEE C2 (NESC).

B. The BTR with assistance from a CM will coordinate inspection of electrical equipment and installations for NEC compliance. The subcontractor is responsible for notifying the BTR and CM when installations are available/ready for inspection.

C. Electric motors must be labeled to be in accordance with National Electrical Manufacturers Association (NEMA) MG-1 or listed by an organization currently recognized by OSHA as an NRTL.

D. Electrical equipment and devices for which there is a NRTL listing category must be listed or labeled by UL or another OSHA recognized NRTL. The following agencies are not OSHA approved NRTLs:

A. Canadian Standard Association (CSA) (unless they also include the "US" stamp)

B. European Union

C. International Electrotechnical Commission (IEC)

E. Electrical equipment for which there is no listing category must be evaluated and tested using a method submitted to, and approved by, the BTR prior to delivery of the equipment.

F. Electrical equipment is subject to the Counterfeit Suspect Item Program, as stated in the General Provisions of the Subcontract.

G. Subcontractors shall notify the BTR and CM before energizing, de-energizing, troubleshooting, or repair of electrical circuits. The subcontractor shall submit a Continuity and Unintentional Ground Test Plan.

4.3 Work Control Requirements

- *Work Release for Construction/Service Organizations Form*, (Site Form A-6001-394). Complete and provide form to the BTR or BTR designee for release of work prior to start of said work on a daily basis, unless directed otherwise. The subcontractor shall meet prior to the end of shift daily to discuss progress with the designee. Work shall be limited to listed activities. If unlisted or unforeseen work activities are to be performed, the release shall be modified and approved by BTR and CM, prior to performance of the work.
- During the performance of this Subcontract, the subcontractor shall have an onsite representative authorized to receive instruction and/or other communications. Written communication provided to the designated representative by the BTR shall be deemed as delivered to the subcontractor.
- The subcontractor shall maintain a record drawing set in the field for verification of compliance to the Subcontract requirements and to document red-line changes as required by HMIS-PRO-CONST-14990, *Construction Management*. The subcontractor shall use the Request for Clarification (RCI) process to record and provide information to the BTR for circumstances that deviate from, or require clarification to, the Subcontract documents. The BTR will provide resolution/disposition in the form of a response recorded on the RCI.

5.0 PERSONNEL REQUIREMENTS

5.1 Training and Qualification

- The subcontractor shall ensure that its personnel meet and maintain the appropriate training, qualifications, and certification requirements prior to performance of work as follows:
- Subcontractor personnel shall complete HMIS General Employee Training (MGET) and/or Hanford General Employee Training (HGET) (4-hour average per individual).
- Subcontractor and lower-tier employees shall have completed OSHA Hazard Communication Training that meets the requirements of HMIS-PRO-WP-13299, *Hazard Communication*. See HMIS-PRO-WP-10468, *Chemical Management Process*, for more information.
- Subcontractor and lower-tier employees must meet the pre-qualification requirements of HMIS *Contractor Safety Pre-Qualification Responsibility Determination Worksheet* (Site Form A-6004-289).

- The attached *Job Hazard Checklist* is a preliminary list of hazards and training associated with the project.

A. Additional Training (may not be all inclusive depending on contractor method of installation)

- 170500 Basic Medic First Aid/CPR/AED (at minimum 1 staff trained present at all times)
- 170648 Bloodborne Pathogens Initial (same individuals trained in 170500)
- The Subcontractor shall submit evidence that the competent person for excavations, as defined in Hanford Site Excavating, Trenching, and Shoring Procedure, DOE-0344 meets the requirements set forth in the procedure listed at: http://www.hanford.gov/pmm/files.cfm/WORKER_PROTECTION_VIRTUAL_MANUAL_05-01-17n.pdf

5.2 Security and Badging Requirements

- For any onsite work, see Special Provisions - On Site Services of the Subcontract for details.
- Subcontractor employees shall obtain and wear a Buyer-issued security identification badge. A minimum of two (2) working days advance notice is needed for site badging.
- Subcontractor employees are required to submit to vehicle searches and may not possess, carry and transport certain prohibited articles.
- Subcontractor employees are required to read, understand and comply with these requirements.

D. The successful subcontractor does not require a security clearance.

5.3 Site Access and Work Hours

- Standard workweek:
- Four 10-hour days
- Monday – Thursday 6:00 a.m. to 4:30 p.m.
- One unpaid half-hour lunch period.
- The Hanford Site has ten facility closure days (provided upon request) per year.
- The subcontractor shall submit a written request to the BTR/CM to perform work outside of the standard work hours, and receive CS approval prior to performing work per the requested schedule deviation.

6.0 ENVIRONMENTAL, SAFETY, HEALTH AND QUALITY REQUIREMENTS

6.1 Integrated Safety Management System (ISMS)

The subcontractor shall exercise a degree of care commensurate with the work and the associated hazards. The subcontractor shall ensure that management of safety and environmental functions and activities is an integral and visible part of the company's work planning and execution process. As a minimum, the subcontractor shall:

A. Thoroughly review the defined scope of work

B. Identify hazards

C. Analyze hazards and implement necessary controls

D. Perform work within the identified controls

E. Provide feedback

The subcontractor shall apply principles listed in Special Provision – On Site Services of the Subcontract.

The subcontractor shall flow down the ISMS requirements of this SOW to lower-tier subcontractors performing work on the Hanford Site commensurate with the risk and complexity of the work.

6.2 Subcontractor Company Safety Professional

The subcontractor company's safety professional cannot be the supervisor for the task. The Subcontractor's Safety Professional works closely with the project supervisor and lower-tier subcontractor's supervisor(s) to ensure that work is performed in a safe manner. Subcontractors shall submit the resume of their safety professional for approval.

- **Qualifications**:
  - OSHA 30-hour for Construction
  - Minimum of 5 years of construction experience with a role that involves Safety and Health oversight
  - A certification such as Occupational Hygiene and Safety technicians (OHST) / Construction Health and Safety Technician (CHST) or greater OR a degree in Safety and Health
  - Annual HMIS's Safety and Health Program Orientation (Given by HMIS safety and Industrial Hygiene (IH) professionals)
- **Responsibilities**:
  - Develop and maintain the Job Hazard Analysis throughout the project

NOTE: For construction that is phased, or has dissimilar hazards, separate JHA's shall be submitted.

- Develop and maintain permits/plans that are generated by the subcontractor and their lower-tier subcontractor(s)
- Perform daily inspections with the project supervisor (it is expected that the Safety Professional will perform this at the job site)
- Ensure that the project supervisor is documenting the daily inspections, including both positive observations and deficiencies along with corrective action(s)
- Attend pre-job meeting at least once/week
- Work alongside supervisor to ensure that equipment used onsite is properly maintained
- Work alongside supervisor to ensure that each employee's (and lower-tier employee's) training records and Employee Job Task Analysis (EJTA) are approved prior to performing work, and maintained current throughout the project.
- Work alongside supervisor to ensure that products/chemicals (provided by the subcontractor and lower-tier subcontractors) are submitted and approved prior to use.
- Attend kick-off meetings and progress meetings
- Attend job walk-down after award of contract with supervisor, HMIS Construction Manager and HMIS Safety Professional
- Participate in scored inspections with supervisor, HMIS Construction Manager, and HMIS Safety Professional
- Help define high risk or critical activities
- Evaluate and respond to unplanned safety event and perform necessary event investigations
- Participate in Buyer investigations and fact-finding meetings
- Ensure subcontractor is compliant with contractual Health and Safety requirements and perform field verifications.
- Work alongside supervisor to help resolve employee concerns

NOTE: The safety professional's oversight frequency shall increase if the subcontractor or HMIS determines that more rigorous oversight is required.

6.3 Subcontracting Company Supervisor Requirements

The subcontracted company's task supervisor shall be on-site managing the field execution of the task. The supervisor as line management is responsible for the safe execution of the task. The supervisor, with support from the subcontracted company's Safety Professional shall

ensure that all work performed by subcontractor and lower-tier subcontractors is safely performed and compliant with the requirements. The subcontractor shall submit the resume of the designated supervisor and any alternate supervisors for approval.

- **Qualifications**:
- OSHA 10-hour for Construction
- Current First Aid and CPR training
- Annual HMIS's Safety and Health Program Orientation (Given by HMIS safety and IH professionals**)**
- **Responsibilities**:
- Shall be on the job site when work is being performed and when equipment or materials are being staged or removed.
- Develop and maintain required permits and plans generated by the subcontractor and the lower-tier subcontractor(s). throughout the project
- Perform daily jobsite inspections
- Document the daily inspections, including both positive observations and deficiencies along with corrective action(s)
- Conduct pre-job meetings
- Maintain equipment safe and in good working order with support of company safety professional
- Ensure, with assistance from company safety professional, that each employee's (including lower-tier employee's) training and EJTA record is approved prior to performing work and maintained current throughout the project.
- Ensure, with assistance from company safety professional, that products/chemicals (including products provided by lower-tier subcontractors) are submitted and approved prior to use.
- Attend kick-off meetings and progress meetings.
- Attend job walk-down after award of contract with company safety professional, HMIS Construction Manager and HMIS Safety Professional.
- Participate in scored inspections with company Safety Professional, Buyer Construction Manager, and Buyer Safety Professional.
- Assist with event investigations.
- Participate in Buyer investigations and fact-finding meetings.

- Ensure, with company Safety Professional, that the work is being accomplished in accordance with HMIS and Department of Energy Safety and Health requirements.
- Work alongside company Safety Professional to help resolve employee concerns.

6.4 Safety Requirements

A. Unless specified otherwise, the applicable portions of the current edition or revision of the code in effect on the date of award shall be used.

B. 10 CFR 851, Workers Health and Safety Program

C. Buyer's safety and health procedures. HMIS Safety Program and Worker Protection are available on the internet as a "Worker Protection Virtual Manual" (https://hmis.hanford.gov/page.cfm/SubcontractorForms/Construction)

D. Safety and Quality Standards in "The Special Provisions – On-Site Services" section 3.0 includes a comprehensive list of HMIS Safety Procedures. The subcontractor shall stop work and notify the BTR and CM if an unplanned for risk or hazard is discovered that is not covered by these documents. The subcontractor shall notify the BTR and CM if the unexpected/unplanned for condition exposes the employees to a hazard that could require a medical monitoring program.

E. The subcontractor is accountable for the safe performance of the work, and the protection of its employees, the public, and the environment.

F. The subcontractor shall comply with applicable laws, regulations, and directives.

G. Subcontractor will identify hazard(s) requiring a unique safety plan: (e.g., railway use, special chemical or process, etc.) and submit to BTR/CM for approval prior to performing onsite work.

H. The subcontractor shall complete a detailed, daily, documented, (Site Form A-6005-766), pre-job safety meeting with employees and support personnel required for the work scope. The subcontractor shall keep the completed forms in the subcontractor's Site Book. Provide these forms to HMIS upon BTR/CM request at the close out of the task.

I. If IH monitoring is required for anticipated hazards (e.g., noise, chemical, hazardous environment, etc.) it shall be documented in the job safety analysis (JSA). The HMIS IH will provide equipment, monitoring personnel, and be responsible for records maintenance (including communication of monitoring results).

J. If heat/cold stress monitoring is deemed necessary, the Buyer may provide equipment and training upon request. The subcontractor may use onsite services for wet bulb globe temperature (WBGT) readings, such as the Hanford Meteorological Station, for a standard work area. The subcontractor is responsible for records maintenance per the applicable procedure (including communication of monitoring results).

K. Prior to start of work, the subcontractor shall submit a hazard analysis to the BTR/CM.

L. The subcontractor shall:

a. Ensure that equipment used on the project site meets applicable federal and state regulations, manufacturer's operations and safety requirements, and Buyer's safety requirements.

b. Submit a subcontractor *Chemical Inventory Worksheet (CIW)* (Site Form A-6003-412, Section A) for BTR review/approval.

NOTE: Refer to HMIS-PRO-WP-10468, "*Chemical Management Process*" for instructions on completing this form.

c. Post Part A of the approved CIW (listing each product, the product name, the storage location, the total amount stored and the container size/type) at the chemical storage location.

d. Maintain copies of the *Material Safety Data Sheets* (or *Safety Data Sheets*) for each chemical on the job site.

e. Submit a completed CIW showing the total quantity of each chemical of interest, EHS and TRI product used (section D of the CIW).

f. Submit a revised CIW before bringing new chemicals on the job site.

g. Remove, at the completion of the project, unused chemical products from the job site.

h. Provide additional data as necessary in support of the Emergency Planning Community Right-to-Know Act of 1986.

i. Participate in walk-down of the actual construction site with the Buyer's Safety Representative prior to start of onsite work.

j. Maintain the work area in a neat, clean, and safe condition; and maintain access to the building for facilities personnel through the use of signs and barricades. Post "Construction Area" or appropriately worded signs accordingly. Remove generated materials from the premises upon completion of the work.

k. The subcontractor and lower-tier subcontractors are required to follow a written "Project Specific Hazard Communication Written Program (PSHCP)" An example of this can be found at https://www.hanford.gov/pmm/page.cfm/ContractorForms

l. Subcontractors and its lower-tier subcontractors shall be responsible to complete an Employee Job Task Analysis (EJTA) in accordance with HMIS-PRO-WP-11058 for of the following situations:

a. For subcontractor employees who will be on the Hanford Site for more than 30 cumulative days in a year.

b. For subcontractor employees who may potentially be exposed to hazards (e.g. radiological, beryllium, hazardous wastes, noise) while performing work in accordance with the Subcontract SOW.

c. For subcontractor employees enrolled in a medical or exposure monitoring program required by 10 CFR 851, and/or other applicable federal, state or local regulation or obligation.

If any of the above conditions are met, the subcontractor and/or lower-tier subcontractor employee must have a current, approved EJTA prior to beginning work on the Hanford Site.

Subcontractor and/or its lower-tier Subcontracts shall follow all requirements as described above.

6.5 Cyber Security Requirements

The work activities for this SOW have been designated as Low/Medium in accordance with the Federal Information Processing Standards (FIPS 199).

The subcontractors and its lower-tier subcontractors shall have a Cyber & Industrial Control System Security Program and implementing procedures that utilizes a national or international voluntary consensus standard such as NIST 800-82, NIST 800-83 and FIPS 199 (or equivalent) that includes (as a minimum) the following requirements:

A. Least privilege in system and application development, to include internal operations

B. Account management principles for system and application development following these guidelines:

a. Password:

- Complexity (8 characters, numbers, special characters, etc.)
- Usernames and passwords are not hard coded in the application
- Passwords that expire on a set time-frame
- Prohibit password reuse
- Ability to remove account
- Capable of forced password reset
- No interactive service accounts
- Usernames are unique
- Implement role-based access
- Automated account management tool

- Breach disclosure and notification process
- Patching policy and software update process for installed ICS systems in customer environments
- Flaw remediation policy

- Internal vulnerability discovery process
- Enterprise anti-malware software implementation
- Source code management process
- Outsource and/or third-party controls/management process
- Log management process

The Cyber & ICS Security Program documents addressing the above requirements and implementing procedures are required to be reviewed, evaluated, and approved by HMIS Cyber Security Organization upon award of the subcontract. The subcontractors and its lower-tier subcontractors shall, during the performance of this Subcontract, submit proposed changes to the program and implementing procedures to the Buyer/QAE/CS for review and approval prior to implementation.

The subcontractors and its lower-tier subcontractors shall be responsible for performing secure workmanship and shall conduct the security control measures necessary to ensure that all work confirms to referenced codes, standards, and other requirements as defined by this SOW.

If the subcontractors and its lower-tier subcontractors subcontracts any portion of this work scope to lower-tier subcontractors, the subcontractors and its lower-tier subcontractors shall be responsible for the flow down of applicable portions of this SOW to their lower-tier subcontractors, including Cyber & ICS requirements, pertaining to services and activities for which they are responsible.

All subcontractors' and their lower-tier subcontractors' activities are subject to oversight by HMIS's cyber security and/or engineering representative(s) at the subcontractors' and its lower-tier subcontractors' facilities, including lower-tier facilities if applicable. Access to the subcontractors and its lower-tier subcontractors or lower-tier's facilities shall be requested through the subcontractors and their lower-tier subcontractors' contract representative and HMIS's cyber security. The visit may be performed jointly with the subcontractors and its lower-tier subcontractors.

6.6 Quality Assurance and Control

The work activities associated with this SOW were designated as Quality Level (QL) 3, General Service (GS) by the applicable DA and/or Technical Authority (TA). Therefore, based on a graded approach, the subcontractor shall document, implement, and maintain a Quality Assurance Program (QAP) that utilizes elements of a national or internationally recognized voluntary consensus standard, such as, ISO-9001-2008 or an equivalent standard (e.g. NQA-1, etc.). **Note:** Program is not required to be ISO certified. The subcontractor shall submit the QAP to the Buyer/Quality Assurance Engineer (QAE) for review and approval with the proposal, and as required in the submittal register prior to performing work activities and every 3 years thereafter, depending on the length of the contract. The subcontractor shall, during the performance of this Subcontract, submit proposed changes to the QAP and implementing

procedures to the Buyer for review and approval by the Buyer/Quality Assurance Engineer (QAE) prior to implementation. The QAP shall also address the following:

- **Instructions, Procedures, and Drawings**: The subcontractor shall ensure that work activities are performed in accordance with documented instructions, procedures, and/or drawings that include appropriate acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. Furthermore, the subcontractor is responsible for ensuring that procedures, instructions, and drawings, are controlled in a manner to ensure that only correct documents (including current revisions) are being used to perform work activities.
- **Control of Special Processes**: Subcontractors performing special processes, such as those used in welding, heat treating, and non-destructive examination shall ensure that those processes are performed by qualified personnel using qualified procedures in accordance with specified requirements.
- **Control of Inspections**: The subcontractor shall provide for and/or maintain an internal quality control/inspection system in accordance with the requirements of the contract. Inspections required to verify conformance of an item or activity to specified requirements or continued acceptability of items in service shall be planned and executed. Characteristics subject to inspection and inspection methods shall be specified. Inspection results shall be documented in the field work package. Inspection for acceptance shall be performed by qualified persons other than those who performed or directly supervised the work being inspected.
- **Test Control**: Tests required to verify conformance of an item to specified requirements, or to demonstrate satisfactory performance for service shall be planned and executed. Characteristics to be tested and test methods to be employed shall be specified. Test results shall be documented and their conformance with test requirements and acceptance criteria shall be evaluated.
- **Control of Measuring and Test Equipment**: When tools, gauges, instruments, or other Measuring and Test Equipment (M&TE) are required for inspection and/or test activities, the subcontractor shall ensure they are controlled, calibrated, and maintained. Methods and frequency of checking accuracy shall be defined in procedures. The calibration method and interval of calibration for measuring and test equipment shall be defined based on the type of equipment, stability characteristics, required accuracy, intended use, and other conditions affecting capability" and other conditions affecting capability. Out-of-calibration devices shall be tagged or segregated, or both, and not used until they have been recalibrated. Measuring or test equipment consistently found to be out of calibration shall be repaired or replaced. Measuring and test equipment shall be suitably marked, tagged, labeled, or otherwise identified to indicate calibration status and establish traceability to calibration records.

- **Inspection, Test, and Operating Status**: The status of inspection and test activities shall be identified either on the items or in documents traceable to the items where it is necessary to ensure that required inspections and tests are performed and to ensure that items that have not passed the required inspections and tests are not inadvertently installed, used, or operated. Status shall be maintained through indicators, such as physical location and tags, markings, shop travelers, stamps, inspection records, or other suitable means.
- **Control of Nonconforming Items**: Items that do not conform to specified requirements shall be controlled to prevent inadvertent installation and/or use. Nonconforming items shall be segregated, when practical, by placing them in a clearly identified and designated hold area until properly dispositioned. Nonconforming conditions shall be documented on the subcontractor's nonconformance form. A disposition, such as use-as-is (accept-as-is), reject, repair, or rework of nonconforming items shall be made and documented. Reworked items shall be reexamined in accordance with applicable procedures and with the original acceptance criteria. Repaired items shall be reexamined in accordance with applicable procedures and with the original acceptance criteria unless the disposition has established alternate acceptance criteria.

The subcontractor, including lower-tier subcontractors, shall be responsible for performing quality workmanship and shall conduct quality control measures necessary to ensure that work conforms to applicable drawings, specifications, referenced codes and standards, and other requirements defined in this SOW. When subcontracting portions of this Contract, the subcontractor is required to invoke the applicable Quality Assurance Program requirements on their lower-tier subcontractors.

The Buyer reserves the right to verify the quality of work at the subcontractor's facility, including lower-tier subcontractor's facility. Access to a lower-tier subcontractor's facility shall be requested through the subcontractor and verification may be performed jointly with the subcontractor. Provide advance notification to HMIS in accordance with Subcontract documents prior to performance of tests or inspections.

The subcontractor shall ensure that work activities are performed in accordance with documented instructions, procedures, and/or drawings that include appropriate acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. Furthermore, the subcontractor is responsible for ensuring that procedures, instructions, and drawings, are controlled in a manner to ensure that only correct documents (including current revisions) are being used to perform work activities.

B. **Suspect/Counterfeit Items:** The subcontractor is responsible for ensuring that items being furnished comply with procurement documents. The subcontractor shall warrant that items furnished under this contract are genuine, (i.e., not suspect/counterfeit) and match the quality, test report, markings, and/or fitness for use required by the contract. Controls shall be established to assure that only correct and accepted items are used and/or installed.

Markings or identification shall be maintained on the items (or in documentation traceable to the items) or in a manner that assures identification is established and maintained. Refer to following website for suspect/counterfeit provisions:

https://www.energy.gov/sites/prod/files/2014/06/f16/SCI_Training_Manual.pdf

Items that do not conform to specified requirements shall be controlled to prevent inadvertent installation and/or use. Nonconforming conditions shall be documented on the subcontractor's nonconformance form. Nonconforming conditions identified with a proposed disposition of "Accept-As-Is" or "Repair" shall be approved by the Buyer prior to corrective action being taken by the subcontractor. The following are definitions of Accept-As-Is and Repair:

- **Accept-As-Is** – A disposition permitted for a nonconforming item when it has been established that the item is satisfactory for its intended use without repair or rework.
- **Repair** – The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though the item does not conform to the original requirements.

After the recommended disposition has been evaluated by the Buyer, the form shall be returned to the contractor with the disposition of approval or rejection. The subcontractor is then allowed to resume work activities for approved non-conformances only.

NOTE: A subcontractor nonconformance exists when items or work do not conform to specified technical requirements as specified in the procurement documents.

Subcontractors performing special processes, such as those used in welding, heat treating, and non-destructive examination, and post installed concrete anchors (PICA) shall ensure that those processes are performed by qualified personnel using qualified procedures in accordance with specified requirements.

The Buyer shall perform oversight to verify compliance to contract requirements. The Buyer shall be given five (5) working days' notice of tests to be made by the subcontractor or its lower-tier subcontractors in order that the Buyer may witness such tests. The Buyer reserves the authority to assign "Hold Points" to inspection/test activities performed by the subcontractor or its lower-tier subcontractors in order to witness those inspection/test activities.

The subcontractor shall provide for and/or maintain an internal quality control/inspection system in accordance with the requirements of the contract. When tools, gauges, instruments, or other measuring and test equipment (M&TE) are required for inspection and/or test activities, the subcontractor shall ensure they are controlled, calibrated, and maintained.

The subcontractor shall maintain and deliver documents in accordance with the Submittal Register of this SOW (or more frequently as required by the drawings and specifications). The subcontractor shall perform and document inspections and testing as specified in the attached Construction Inspection and Test Matrix (CITM) template. Inspection and testing personnel shall be appropriately qualified/certified. As applicable, M&TE used in performance of

inspections and testing shall be calibrated using standards traceable to the NIST. The subcontractor shall provide, upon request, the supporting calibration documentation for each piece of M&TE used during testing activities.

https://www.hanford.gov/pmm/page.cfm/ContractorForms

The subcontractor is responsible for generating, storing, maintaining, and submitting records. Records shall be stored in manner that minimizes the risk of loss, damage, or destruction. Submitted records (as indicated in the SOW Submittal Register or Construction Specification) shall be complete, legible, and reproducible.

6.7 Subcontractor Quality Assurance/Control Professional

The subcontractor shall assign a Quality Assurance/Quality Control (QA/QC) professional who shall be independent of the work being performed under the scope of this Subcontract. The QA/QC Professional works closely with the subcontractor supervisor and their lower-tier contractors to ensure quality workmanship and oversight. The subcontractor shall submit a resume along with any documented applicable qualifications/certifications for approval prior to the subcontractor being authorized to proceed with work. The subcontractor shall submit for approval any changes in the QA/QC representative assignment. The responsibilities of this position are included below (but not limited to):

- Minimum of five (5) years of construction experience with roles that involve quality, testing and inspections.
- Act as point of contact and represents the subcontractor in quality related matters.
- Ensures subcontractor's Quality Assurance Program implementation.
- Develops and maintains quality documents that are generated by the subcontractor and their lower-tier contractor(s) (e.g. Inspection Reports, Test Plans, Test Procedures, Test Data Sheets, M&TE Records, etc.).
- Perform regular independent oversight and ensures required testing and inspections are completed. The subcontractor's QA/QC representative (or HMS approved and documented designee) shall be present to verify that ALL required testing and inspection activities are performed in accordance with contract requirements (e.g. applicable codes and standard, etc.).
- Ensure that deficiencies are documented in accordance with subcontractor's corrective action and nonconformance program.
- Attend kick-off meetings, and as necessary attend job walk-downs, progress meetings and safety meetings.
- Work alongside the subcontractor supervisor to ensure that the work is being accomplished in accordance with the Subcontract requirements.

6.8 Construction Inspection, and Test Matrix

The subcontractor shall submit, in accordance with the SOW Submittal Register, a CITM using the template provided, or an approved equivalent. The CITM defines the specific inspections and tests required for the scope of work under this Subcontract including specific methods used for documenting inspection and test activities. The CITM shall be used by the subcontractor and the Buyer to specify all verification, witness, hold, and surveillance points for critical attributes, and shall be approved by HMIS.

The purpose of the CITM is a single point source document provided by the construction subcontractor that defines specific inspection and testing points that shall be performed by the subcontractor, lower-tier subcontractor(s) and/or their third party inspection/testing agent(s). This is to ensure that work being conducted during the field construction, phase meets or exceeds requirements set forth in this SOW. The details of the step by step implementation of the CITM requirements shall be provided in the appropriate Construction Inspection and Test Record (CITR) facilitating documentation of sign-off on specific verification steps.

The CITM shall provide a list of personnel that will be performing inspections and test activities, including qualifications, certifications, and test agencies, as required by all project procurement documents. The CITM shall include lower-tier subcontractor(s) inspection and testing certifications and testing agencies to be used for this contract, as applicable. Identified within the CITM, are specific activities (e.g. hydrostatic pressure, visual leak tests, soil compaction, load, concrete break tests, slump tests, weld inspections, disinfection, etc.) to be inspected or tested, by whom and at what stage or frequency, as well as Hold and Witness Points, references to relevant standards, acceptance criteria and the records to be maintained. The CITM shall be a formal submittal for review/approval by the appropriate entities within HMIS. Upon approval, all CITM documentation and subsequent inspection/test records shall be a formal submittal for review/approval by the appropriate entities within HMIS.

6.9 Construction Inspection, and Test Record

The subcontractor shall submit, in accordance with the SOW Submittal Register, a CITR for each significant sequence of construction operations using the template provided, or an approved equivalent. The CITR shall provide the specific step by step outline for specific verification activities required by the approved CITM for the scope of work under this Subcontract. The CITR shall be used by the subcontractor and the Buyer to document all verification, witness, hold, and surveillance points for critical attributes, and shall be approved by HMIS. The CITR shall be maintained at the field Work location by the subcontractor.

6.10 Environmental Requirements

Environmental support and issues shall be coordinated through the BTR/CM.

- Communications with regulators, for example, State of Washington Department of Ecology *Asbestos Notice of Demolition and Renovation*, shall be coordinated through the BTR/CM.
- The subcontractor shall maximize the use of environmentally preferable products when performing work on the Hanford Site.
- The subcontractor shall maintain a spill kit onsite during the use of materials and/or storage of equipment. The kit shall be sufficient in nature to contain spills that may occur during use or storage of a product or equipment. The subcontractor personnel shall be familiar with the use of the spill kit and the requirements of this section.
- The subcontractor shall notify the BTR/CM of unplanned releases or spills of hazardous materials (including petroleum products), hazardous substance, and/or dangerous waste as described below:

- **Emergencies**: If the spill is an emergency, immediately call 911 (onsite landline telephone) or (509) 373-0911 (cellular telephone). Then notify BTR/CM in accordance with the "non-emergencies" procedure below.
- **Non-emergencies**: If the spill is a non-emergency, notify the BTR/CM within 30 minutes of discovery.

B. The subcontractor shall perform the cleanup of spills as directed by the BTR/CM.

C. The subcontractor shall coordinate waste management activities through the BTR/CM.

D. The subcontractor shall avoid generation of dangerous waste during performance of work on the Hanford Site. If dangerous waste generation is unavoidable, and it is not discussed in "Planned Waste Generation/Disposal Information" of the CIW, the subcontractor shall submit a *Waste Planning Checklist*, (Site Form A-6002-827), for management of the generated waste, to the Buyer for approval prior to performing work. With regards to applying federal and state regulatory requirements, the subcontractor is considered a "large quantity generator" on the Hanford Site.

   The Buyer will dispose of dangerous waste that was generated on the Hanford Site in accordance with Hanford Site requirements after initial accumulation by the subcontractor. Treated wood materials (e.g., treated railroad ties and power poles) that are removed from their site of origin due to project activities shall either be reinstalled at the original location and configuration, re-used on the project site for beneficial use (e.g., general construction, landscaping), or relocated to an approved staging/accumulation area as directed by the BTR.

E. The Buyer will dispose of asbestos waste that was generated on the Hanford Site in accordance with Hanford Site requirements after initial accumulation by the subcontractor.

F. Inert waste (e.g., broken asphalt [except roofing material], broken concrete and overburden/spoils material such as rock, earth, brick, and glass) may be disposed by the subcontractor at no charge at Pit 9 on the Hanford Site. The subcontractor will work with

the project Environmental Compliance Officer (ECO) to ensure appropriate paperwork is completed for waste disposal in Pit 9. The subcontractor shall notify the BTR/CM at least 48 hours prior to scheduled/planned deliveries into the pit.

G. The subcontractor shall not discharge wastewater on the Hanford Site without written approval from the BTR and CM. Wastewater resulting from washing concrete trucks, pumps, forms, and associated equipment shall only be discharged in specified area(s). After the concrete has set up at the discharge location, it shall be collected and disposed of by the subcontractor as inert waste.

H. The subcontractor shall discharge excavated soils/sludge only in locations that have been clearly communicated to the subcontractor by the BTR/CM.

I. Other wastes generated by the subcontractor during this work activity shall be disposed of by the subcontractor in accordance with applicable laws, regulations, and Hanford requirements.

J. With the exceptions listed below, the subcontractor shall submit an inventory of internal combustion engines (e.g., generators), including the brake horsepower, prior to bringing them to the Hanford Site, to the BTR/for review/approval to ensure regulatory compliance to WAC 173-400-035. The following internal combustion engines do not need to be listed:

- Those that are in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or
- Those that are in or on a piece of equipment that is intended to be man-propelled while performing its function (such as lawnmowers and string trimmers).
- The Buyer will notify the permitting authority if required under WAC 173-400-035. The CM will notify the subcontractor of additional requirements triggered by the notifications (e.g., ultra-low sulfur fuel).
    - If cultural materials (e.g., bones, artifacts) are encountered, the subcontractor shall stop work within the immediate vicinity of the find and notify the BTR/CM. It is not anticipated that cultural materials will be encountered during this project. However, workers must be cautioned to watch for cultural materials during excavation.
    - If this activity is to be initiated during active nesting season (i.e., between mid-March through end of July),the subcontractor shall notify the BTR/CM to initiate a review of the area that is to be disturbed to make sure no nesting is occurring within the affected area. The subcontractor shall instruct workers to watch for active nests. When subcontractor employees encounter active nests and/or nesting birds, or observe bird defensive behaviors during project activities, the subcontractor must stop work in the immediate vicinity of the nest and must contact the BTR/CM for additional review and required action.

6.11 Radiological Requirements

There are specific radiological requirements associated with this project. Radiological Control Technicians will be present to monitor excavations and perform surveys on equipment and on waste periodically and before removal from the Hanford Site.

7.0 MEETINGS AND SUBMITTALS

7.1 Meetings

- **Site Labor Conference**: Will be held between the Buyer, the appropriate union(s), and the subcontractor before work commences at the Hanford Site in accordance with the Site Labor Agreement (Article X, Section 6).
- **Kickoff Meeting**: Before start of work, HMIS will conduct a meeting with the subcontractor and major lower-tier subcontractors. This meeting normally follows the Site Labor Conference and lasts approximately one (1) hour. The purpose of the meeting is to coordinate work start-up, and familiarize project participants with the work scope and the worksite. The typical CITM and CITR templates will be discussed at this meeting.
- **Construction Progress Meetings**: Coordination/progress meetings will be required on an as needed basis (typically weekly) to exchange work-related information, including but not limited to design and scope changes, progress, coordination with functional utility providers, and scheduling issues during the course of construction.
- **Safety Meetings**: Subcontractors shall perform and document daily pre-job meeting using the *Pre-Job Briefing Checklist – Construction* (Site Form A-6005-766). Late arrivals and/or visitors shall be provided with the same daily briefing. The subcontractor is also required to perform a documented weekly safety meeting. This documentation shall be maintained onsite for the job duration for review upon request.

7.2 Submittals

- The required submittals for this Subcontract are listed in ~~Attachment~~ Appendix A, Submittal Register, which also includes applicable definitions.
- Items shall be submitted by the subcontractor using the *Subcontractor Document Submittal* (Site Form A-6003-061).
- Substitutes: A completed Subcontractor Document Submittal Form shall be submitted for each requested substitution. Substitution requires approval if an item is more hazardous than the specified product or if the product callout includes the phrase such

as "or approved substitute". Submitted data shall show "fit, form, and function" equivalency, as well as cost savings, if any, to the contractually required item.

8.0 INTERFACE / NOTIFICATIONS

A. A BTR will be designated for the subcontract/ subcontract release.

B. Designation of BTR

The BTR is responsible for monitoring and providing technical guidance for this subcontract and should be contacted regarding questions or problems of a technical nature. The BTR is also responsible for appropriate surveillance of the subcontractor's representative while on site. In no event, however, will an understanding or agreement, modification, change order, or any deviation from the terms of this subcontract be effective or binding upon HMIS unless formalized by proper subcontract documents executed by the Contract Specialist prior to completion of this subcontract. On all matters that pertain to the subcontract terms, the subcontractor shall contact the Contract Specialist specified within this subcontract. When in the opinion of the subcontractor, the BTR requests or directs efforts outside the existing scope of the subcontract; the subcontractor shall promptly notify the Contract Specialist in writing. The BTR does not possess any explicit, apparent or implied authority to modify the subcontract. No action should be taken until the Contract Specialist makes a determination and/or modifies the contract.

C. The work will be inspected daily/periodically by the BTR.

D. The subcontractor shall immediately notify the field Contract Release BTR (who will contact HMIS Safety) of any injuries or incidents; to include damage to subcontractor-owned property or equipment. The subcontractor will follow this up within 24 hours with a written explanation to the Contract Specialist of the occurrence.

E. In the event that there is an abnormal or unusual situation associated with this contract work scope, the subcontractor is to immediately contact the BTR. If, after several attempts, the subcontractor is unable to contact either the BTR or the Contract Specialist, the Contractor is to contact HMIS Occurrence Notification Center at (509) 376-2900, which is available 24 hours a day, seven days a week, and provide them with: Contract Number, Contract Specialist's name, BTR's name and a short summary of the abnormal or unusual situation. If after making contact with HMIS, the subcontractor is advised to suspend activities, the subcontractor is not to proceed until such direction to proceed has been expressly issued by the Contract Specialist. If there is an emergency situation, the subcontractor is to make the appropriate immediate emergency call to 911 or 373-0911 for cell phones and then make the notifications to HMIS as set forth herein.

F. Prior to work in the field, subcontractor shall ensure each employee has been cleared by HMIS and verify all training is complete in accordance with this statement of work.

G. Prior to work in the field, the subcontractor shall notify the BTR.

9.0 DELIVERABLES, PROJECT CONTROLS, MILESTONES AND PERFORMANCE SCHEDULE REQUIREMENTS

9.1 Deliverables

- The following construction documentation, as appropriate, shall be maintained throughout construction and submitted in accordance with the Subcontract Documents or as identified herein:
- Records and reports identified as deliverables in individual Specification Sections, the Construction Inspection Test Matrix (CITM), and other sections of this SOW shall be turned over to the BTR and CM during the punch list process unless otherwise noted.
- As-built documentation as required of this SOW and/or individual Specification Sections (i.e., redlines) shall be submitted in accordance with ~~Attachment~~ Appendix A, Submittal Register.
- During the course of construction, the subcontractor shall complete *Construction Daily Activity Report (DAR)* (Site Form A-6003-054) or approved equivalent. The reports shall be used to provide a daily recording of information pertaining to construction, safety, quality, and problems associated with the Subcontract. The subcontractor shall deliver the DAR to the BTR and CM the next workday.
- The subcontractor is required to participate in the project turnover process by assisting the BTR and CM in developing and completing the project punch list. The subcontractor shall notify the BTR and CM no later than one (1) day after completing the punch list item(s).

9.2 Milestones

- Complete ABS installation, tunnel installation, and fence installation before March 31, 2022.

9.3 Performance Schedule

The subcontractor shall submit a project schedule for approval within five (5) calendar days after Notice of Award covering activities for the duration of the Subcontract. The schedule shall identify logical sequence and relationship of activities for design, submittals, procurement, delivery, installation, subcontracted work, milestones, and testing and inspections of the work covered by the Subcontract. Activity durations shall be in working days. The schedule shall be based on Buyer 4-10 work schedule. The 4-10 working schedule closure days shall be as nonworking days on contractors schedule. The subcontractor schedule should include line item resource loading as an attachment to the project schedule. The schedule should identify the dollar amounts for labor and materials separately for each activity shown on the schedule at a level of detail providing an accurate expenditure plan by month or other work breakdown consistent with request for progress requests.

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REFERENCES

REFERENCED FORMS

Title	Number
Chemical Inventory Worksheet	A-6003-412
Construction Daily Activity Report (DAR)	A-6003-054
Construction Pre-Job Briefing	A-6005-766
Job Hazard Analysis Checklist (JHA)	A-6007-189
HMIS Contractor Document Submittal	A-6003-061
HMIS Contractor Safety Prequalification Responsibility Determination Worksheet	A-6004-289
Project Specific Hazard Communication Written Program	A-6006-332
Request for Clarification or Information (RCI)	A-6003-063
Waste Planning Checklist	A-6002-827
Work Release for Construction/Service Organizations	A-6001-394

REFERENCED PROCEDURES AND DOCUMENTS

Title	Number
Chemical Management Process	HMIS-PRO-WP-10468
Construction Management	HMIS-PRO-CONST-14990
Hazard Communication	HMIS-PRO-WP-13299
Occupational Medical Qualification and Monitoring Using EJTA	HMIS-PRO-WP-11058
Off-Site Subcontractor Direction for Preparation and Control of Engineering Drawings	HNF-14660
Testing of Equipment and Systems	HMIS-PRO-ENG-286

Worker Protection Virtual Manual is available at http://www.hanford.gov/pmm/page.cfm/Construction

Suspect/Counterfeit Items Awareness Training is available at https://www.energy.gov/sites/prod/files/2014/06/f16/SCI_Training_Manual.pdf

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APPENDIX A –
SUBMITTAL REGISTER AND DEFINITIONS

1. Numerical submittal sequence number: Example: 1, 2, 3, 4,
2. Format: Describes the type of submittal required:

   MFC Microsoft Format Compatible application (Word, Excel, Access, PowerPoint)

   GEN General or Open Format/Media

   PDF Adobe Acrobat (Portable Document Format)

   DWG An AutoCAD drawing using the Hanford standard formatting (See HNF-14660, Off-Site Subcontractor Directions of the Preparation and Control of Engineering Drawings on https://www.hanford.gov/pmm/page.cfm/Construction)
3. Submittal Type:

   APW = Approval Required Prior to Work (Buyer must approve the subcontractor's submittal prior to the subcontractor being authorized to proceed with activity/work associated with the submittal).

   AP = Approval Required (Buyer must approve the subcontractor's submittal; however, work associated with the submittal may proceed prior to Buyer approve
4. Description / Document Title: Title or general description of the document.
5. Submittal Date: Actual date or number of Calendar Days before or after a milestone that a submittal is due from the subcontractor: Example: June 1, 2005 or CD + 90 [90 days after Conceptual Design Complete]

   A Date of Award

   CD Conceptual Design Complete

   PD Preliminary Design Complete

   FD Final Design Complete

   M Mobilization

   SC Start of Construction

   EC End of Construction
6. Buyer Review Time (Work Days): Example: 3 Days
7. Subcontract Reference: Cross reference to the Subcontract requirement that defines this submittal: Example: SOW 3.1.2
8. Approvers and Reviewers for the submittal approval process.

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Submittal Register

The subcontractor shall meet the required schedule and provide the documents specified in accordance with the following submittals. *Column 8 is for internal use only and must be removed and the table columns redistributed prior to placing this CSOW into Asset Suite.*

Subcontract Number and Name:						Revision:	
1. Submittal No.	2. Format	3. Type	4. Description / Document Title	5. Submittal Date (Calendar Days)	6. Buyer Review Time (Work Days)	7. Subcontract Reference	8. Approvers/ Reviewers
1	PDF	AP/APW	SF-1413 (subcontractor)	SC	3	Special Provisions - Construction (FAR 52.222-6)	
2	PDF		SF-1413 (one for each lower tier subcontractor)	SC	3	Special Provisions - Construction (FAR 52.222-6)	
3	MFC		Chemical Inventory Worksheet	SC	3		
4	PDF		Completed Chemical Inventory Worksheet	EC	3		
5	PDF		Project Specific Hazard Communication Written Program (PSHCP)	SC	3		
6	PDF	AP/APW	Safety Training Records	SC	3		
7	PDF		Competent Person(s)	SC	3		
8	PDF		Verification Letter of Current EJTA (Ready to Work)	SC	3		
9	PDF		Company Safety Professional	SC	3		
10	PDF		Job Hazard Analysis	SC	3		

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Subcontract Number and Name:						Revision:	
1. Submittal No.	2. Format	3. Type	4. Description / Document Title	5. Submittal Date (Calendar Days)	6. Buyer Review Time (Work Days)	7. Subcontract Reference	8. Approvers/ Reviewers
11	PDF		Hazard Communication Training Records	EC	3		
12	PDF		Company Job Supervisor	SC	3		
13	PDF		Construction Inspection and Test Matrix (CITM)	SC	10		
1C	PDF		Construction Inspection and Test Record (CITR)	SC	10		

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APPENDIX C

CONSTRUCTION AND INSTALLATION OF ABS; PHOTO GUIDE (13 PAGES INCLUDING THIS PAGE)

Figure Error! No text of specified style in document.**.1. 55-gallon plastic barrel with masking tape to mark centerline. One barrel will yield two nest burrows**

Figure Error! No text of specified style in document.**.1. Cutting barrel in half with skillsaw.**

Figure Error! No text of specified style in document.**.2. Trace outline of 3.5 gallon pail bottom onto top of barrel section.**

Figure Error! No text of specified style in document.**.3. Use jigsaw to cut hole for pail to just slip about 1 in. into barrel.**

Figure Error! No text of specified style in document.**.4. Use jigsaw to cut bottom out of one 3.5 gallon pail. Leaving 1/2" ring on bottom for bucket strength and structure**

Figure Error! No text of specified style in document.**.5. The ring left on bottom of cut bucket**

Figure Error! No text of specified style in document.**.6. Bottomless pail will sit and wedge into the barrel opening**

Figure Error! No text of specified style in document.**.7. Use caulking gun to apply ample Liquid Nails (or similar adhesive) to solidly affix pail to barrel. Let cure for 2 days before putting unit into ground. This needs to be seal to prevent pail movement and dirt/water from entering burrow. Bucket Handle Can Be removed!**

Figure Error! No text of specified style in document.**.8. Caulk the inside of the pail and barrel as well to ensure no flex or gaps**

Figure Error! No text of specified style in document.**.9. Hole will be on bottom of ABS**

Figure Error! No text of specified style in document.**.10. Test fit: insert the 4 in. x 10 ft tunnel section 2-3 rings into barrel. Barrel should slide over and 'lock' onto tunnel. If too tight, trim points on barrel slightly. No caulking is used to attach tunnel to nest chamber.**

Figure Error! No text of specified style in document.**.11. ABS Burrow portions staged and ready for site install. Buckets that are caulked to barrel can have handles removed as they provide no value. Seal buckets (added later in field) should continue to have handles.**

Figure Error! No text of specified style in document.**.12. Equipment at Job Location**

Figure Error! No text of specified style in document.**.13. Brass or other Numbering tag should be permanently attached to the fixed bucket near the top so it may be visible when dirt is cleared away from the install. May be required to be done in field for accurate and coherent numbering in field.**

Figure Error! No text of specified style in document.**.14. Begin Digging the soil for burrow placement and direction will be provided by the biological SME. Chamber will be 34-36" deep and level bottom. Trench will have slight bend in it with no more than 17% percent**

Figure Error! No text of specified style in document.**.16. Chamber floor should be packed and level and large enough to fit on bottom ~36"x36".**

Figure Error! No text of specified style in document.**.17. Slide tunnel 3-4 rings into chamber**

Figure Error! No text of specified style in document.**.18. Place Burrow Chamber into hole and ensure foundation is solid and level**

Figure Error! No text of specified style in document.**.19. Ensure tunnel gradient appropriate and opening meets the grade appropriately and cover with a few shovels of dirt to keep in place**

Figure Error! No text of specified style in document.**.20. Begin to backfill the dig. Place seal bucket in the chamber to seal, seal bucket should be 1/2 full of clean soil for weight and temperature regulation.**

Figure Error! No text of specified style in document.**.21. Fill entire excavation, chamber through tunnel. Filling to slightly above grade to allow for settling.**

Figure Error! No text of specified style in document.**.22. Use large rocks and soil to create armory against a digging mammal. Create apron on the outside of the burrow opening that imitates fresh soil push from burrow dig**

Figure Error! No text of specified style in document.**.23. Place stake behind the chamber access port. This stake should be in line with tunnel opening and access port directly behind the port. This will make for locating the access easy in the future monitoring efforts.**

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APPENDIX D

EQUIPMENT COMPONENTS FOR COMPLETION OF A SINGLE ABS
(3 PAGES INCLUDING THIS PAGE)

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Equipment Model Number	Equipment Description	QTY	Comments	Subs OK?	Link
S-10757BLU	Plastic Drum - 55 Gallon, Closed Top, Blue	One half	Excellent for indoor or outdoor use. Corrosion free, dent-resistant polyethylene.	NO	Drums
3590ST	3.5 Gallon Round Container 90 mil Thickness- Black	2	BLACK- Safely store or ship your products in these durable pails. High density polyethylene construction withstands temperatures up to 180°F. Stackable with lid. Empty pails nest for storage. FDA compliant. Standard Lid sold separately.	NO	3.5 Buckets
5NLR	Slotted Lid w/ Gasket- BLACK	1	High density polyethylene construction. FDA compliant. Use with 3.5, 5, 6 or 7 Gallon Plastic Pails. BLACK	NO	Bucket Lids
LN-901	Liquid Nails Heavy Duty	1	Liquid Nails Heavy duty to hold small buckets on top of drums	YES	Adhesive
06510100	4" x 100 ft. Single Solid Corrugated Drainage Pipe	1	4" x 33 ft. Single **Solid** Corrugated Drainage Pipe	NO	ADVANCED DRAINAGE SYSTEMS Drainage Pipe: HDPE, 4 in Nominal Pipe Size, 100 ft Overall Lg, Single, Solid, Corrugated Wall - 45FN04|04510100 - Grainger

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N/A	Appropriate Rivets	7	Rivets to fasten patches at bottom underneath. Assume general items within contractor shop (used only if pipe is fastened in with barrel piece)	YES	N/A
S-11901	Metal Tags - Brass, 1 1⁄2" Circle, #1-100	1	Quick, durable identification for machinery, products, parts and tools. Mark valves, pipes and key sets. 18 gauge brass. Numbered 1-100. Use with S-920 Wire Tag Ties.	YES	Metal Number Tags
CW1223	Cut Wire 12 23 gauge Galv 1000/bd	1	12" length 23 gauge cut galvanized wire	YES	Tag Tie Wire
460219	Stakes Pine	4	Grade Stakes Pine (Common: 1 in. x 2 in. x 1 ft.; Actual: .562 in. x 1.375 in. x 11.5 in.)	YES	Wood Stakes
	Baseball to Softball size rock cobble	2.5 gallon per burrow installed	Baseball to softball size rock cobble to place at the burrow opening to keep mammal predators from digging out the opening the ABS.	YES	Rocks